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ABSTRACT

There are thousands of different inservice education programs. The purposes of this study were to identify the elements of effective teacher inservice education; to measure to what degree these elements actually exist in inservice education programs reported by Texas teachers; and to develop a strategy for effective teacher inservice. A modified Delphi technique was used to validate a list of elements of effective teacher inservice education derived from a literature survey. A panel of 60 experts on inservice education was invited to indicate the relative importance of each element using a Likert-type scale. This procedure listed 29 elements of effective teacher inservice education. The list of 29 elements was submitted to two schools--an elementary and a secondary school--in each of the 1,071 school districts in Texas. Principals were asked to have a teacher in their school respond to the survey. From the 2,142 questionnaires distributed, responses were received on 720 (34 percent), rating the elements on a five-point scale from nonexistent to very evident. The mean ranking of each element was then calculated. Although unsolicited, 15 respondents added comments expressing an overall dissatisfaction with teacher inservice education. Most were concerned with dull, boring inservice programs, while others were dissatisfied with the role inservice programs are assuming as a result of the Texas Teacher Appraisal System. The final purpose of the study, to develop a strategy for effective teacher inservice, was considered met by the identification of these 29 elements of effective inservice education. (MLF)

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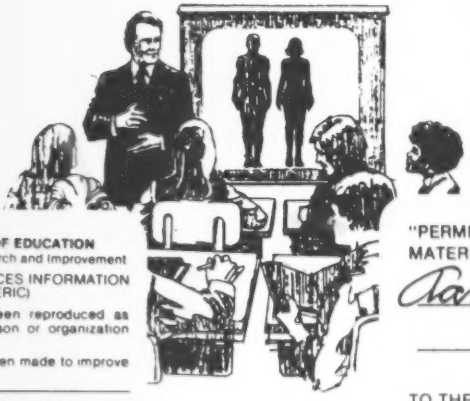

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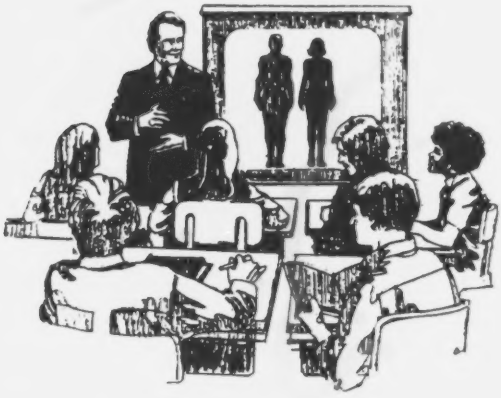

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Chapter 1

INTRODUCTION

During the past few years great progress has been made in identifying the characteristics of effective schools. The question still remains, however,of exactly how schools can become more effective (Sparks, Nowakowski, Hall, Alec, and Imrick, 1985:59). It is important when analyzing school effectiveness to examine the effectiveness and efficiency of teacher training (Gall and Renchler, 1985:vii). Inservice education planners must be knowledgeable of programs for teacher growth which will produce the greatest results and yet still be economically feasible.

Teachers are now receiving great criticism from the public. Teachers are viewed as mediocre and incompetent by many. Therefore, teachers need now, more than ever, to continue to grow professionally (Zumwalt,1986:vii). Excellence in education cannot be achieved without outstanding, well-trained teachers.

Teachers can and will grow. Learning is a lifelong process. Adult needs can be met through learning (Harris, 1980:9). Inservice education not only can satisfy individual learning needs, but also can serve as a process for change. Teaching professionals new behaviors is one of the most fundamental change processes (Harris, Bessent, and McIntyre, 1969:28).

Staff development is one of the most emphasized areas of education. Teachers need to prepare for new tasks, new roles, and increasingly complex teaching materials. They need to build upon their preservice training as the beginning of a continuum of professional development (Dillon, 1972:1). In order to keep up with changes in society and the field of education, teachers and inservice education planners must stress the importance of constantly moving through this continuum of lifelong learning.

There are thousands of different inservice education programs (ERIC, 1980:236). Teachers and inservice education planners are faced with a wide variety of alternatives for inservice education (Zumwalt, 1986:vii). The question remains as to which are the best alternatives that produce the greatest results.
Even as the quality of teacher inservice education improves, teachers still express dissatisfaction about staff development experiences (Cawelti and Reavis, 1980:236). These shortcomings of inservice education may be due to a lack of a clear view of the nature and function of inservice education (Harris, Bessent, and McIntyre, 1969:15). There is a need to clarify and articulate that the goal of inservice education is for the improvement of teaching (Zumwalt, 1986:185).

Whatever the case, there does seem to be a discrepancy between what inservice education should be and what it is in actuality. It is then the intent of this modified Delphi study to ascertain the elements of effective inservice education programs and to determine the degree of presence of these elements in the field.

Statement of the Problem

The problem of this study is that there is a need to plan teacher inservice education programs which are comprised of the commonly known elements of effective inservice education.

Purposes of the Study

The purposes of this study are threefold:
1. To identify the elements of effective teacher inservice education through a modified Delphi investigation.
2. To measure to what degree these elements actually exist in inservice education programs as reported by classroom teachers in Texas public schools.
3. To develop a strategy for effective teacher inservice education.

Research Questions

This study is designed to answer the following research questions:

1. According to inservice education experts,what are the elements of effective inservice education?
2. To what degree are each of these elements present in the field as reported by Texas public school teachers?
3. What is an effective strategy for inservice education?

Significance of the Study

The task of inservice education is to prepare the teachers of today for the future, while their training lies in the past (Sawyer, Gerard, Wiegand, 1977:iii). This is a difficult, yet important task. Fischer described this task when he wrote: "The moment a teacher leaves professional school, he is enroute to a state of obsolescence" (1971:257). Fischer further emphasized the importance of teacher inservice education when he stated: "If we acknowledge that our schools can be no better than the teachers who serve them - and there seems to be no way to avoid this circumstance - an obsession with the continual betterment of teaching is essential" (1971:258). Inservice education is a vital link in educating children.

There are numerous reasons for the increasing importance of inservice education. In the past few years, a decrease in teacher turnover has called special attention to the continuing education of teachers. The declining birthrate has resulted in a tightening job market, thus causing teachers to remain on the job longer than in the past (Dillon, 1976:165; Hite and Howey, 1977:4; Wilen and Kindsvatter, 1978:392). All of these veteran teachers in the field have varying needs for inservice education related to changing curriculum, new teaching techniques, increased knowledge, and state of the art technology.

New teacher graduates, as well as veteran teachers, require quality inservice education programs. Preservice education is actually a mere

introduction to the profession (Harris, Bessent, and McIntyre, 1969:3). Both experienced and new teachers need remediation for their identified weaknesses (Tyler, 1978:142). Inservice education is indeed a key to increasing the effectiveness of individual educators (Fielding and Schalock, 1985:6). Specific problems that confront an individual or a school can often be resolved via inservice education (Tyler, 1978:142). In addition to this, appropriate staff development activities can lift teacher morale and reduce teacher boredom (Harris, Bessent, and McIntyre, 1969:3; Tyler, 1978:142).

Various changes in society also have brought about increased concern for the inservice education of teachers. There is a demand for higher and higher levels of education for our entire population. Education is becoming more and more important (Harris, Bessent, and McIntyre, 1969:3; Bush, 1971:40). The public is extremely dissatisfied with the achievement of students (Dillon, 1976:165). Teachers need training regarding accountability to the public. All teachers should have a thorough knowledge of mastery learning and the related assessment procedures (Hite and Harvey, 1977:4).

Teachers also must receive current knowledge about the special needs of children in our changing society. The multicultural aspect of our country needs to be addressed in staff development programs. The needs of both handicapped teachers and handicapped students also must be met in quality teacher inservice education programs. Not only do teachers have new needs, but students also have new needs.

Technology has presented some additional training needs for educators. New laboratory equipment, teaching machines, satellite television, videotape recorders, and computers have resulted in new ways of administering, teaching, supervising, and learning (Greene, 1971:264). The Computer Age will certainly change the role of the teacher. Educators will need to redirect time and talents as a result of the computer in the classroom (Bush, 1971:40). Inservice education must guide teachers through these technological times.

Most important of all, inservice education programs can bring about changes in people in order to improve instruction (Harris, Bessent, and McIntyre,1969:4). Inservice education can foster program implementation as well as improve the instructional program. Inservice education can improve the effectiveness of a school (Fielding and Schalock,1985:6).

It is evident then, that inservice education is becoming increasingly important not only to teachers, but also to students and to society as a whole. Changes in our society, students, teachers, and the field of education all demand quality teacher inservice education so that teachers are prepared not for the past, but for the present and future.

This study calls attention to the strengths and weaknesses of teacher inservice education programs in the field. It provides information for the improvement of inservice education, which can ultimately improve education as a whole.

Methods of Procedure

An initial list of elements of effective inservice education was developed from background literature, texts, and other research papers. A modified Delphi

technique was utilized in order to validate the list of elements. This technique is described in more detail in the ensuing paragraphs. A questionnaire was developed and disseminated to public school teachers in order to determine the presence of these elements in teacher inservice education programs of Texas. Responses were then analyzed in order to achieve the purposes of this study.

Initial List of Elements

An initial list of elements of effective inservice education was derived from background literature and other research papers. The input of the Delphi panelists was requested in finalizing each element. The members of the Delphi panel had the opportunity to modify, add to, or delete from the list of elements.

Panel Selection

A panel of sixty recognized experts in the field of teacher inservice education was selected to participate in the study. Panel members were chosen nationwide from the following groups: educational administration professors with a specialization in inservice education; local, state, and regional directors of inservice education; and authors of books and substantial articles related to inservice education. Individual authors and experts were requested to nominate others who met one of these criteria. The National Council of States on Inservice Education also assisted in the nominations.

Description of the Delphi Technique

Sackman described Delphi as being "...aimed at qualitative evaluations (qualitative scales of agreement, disagreement, preferences among alternatives)" (1975:8). He further stated that other key objectives for Delphi are consensus of participants and heuristic goals.

Delphi, according to Sackman, exhibits the following characteristics: (1975:9)

1. The format is typically a paper and pencil questionnaire, usually administered by mail.
2. The questionnaire consists of a series of items concerned with study objectives.
3. The questionnaire items may be generated by instructions, guidelines, or both.
5. The questionnaire is administered to the participants for two or more rounds.
6. Each iteration is accompanied by some form of statistical feedback, which usually involves a measure of central tendency, some measure of dispersion or perhaps the entire frequency distribution of responses for each item.
7. Each iteration may or may not be accompanied by selected verbal feedback from some participants, with the types and amounts of feedback determined by the director.

8. Individual responses to items are kept anonymous for all iterations.
9. Outliers (upper and lower quartile responses) may be asked by the director to provide written justification for their responses.
10. Iteration with the above types of feedback is continued until convergence of opinion, or consensus, reaches some point of diminishing returns, as determined by the director.
11. Participants do not meet or discuss issues face to face and they may be geographically remote from one another.

For the first round of the modified Delphi procedure the panelists were mailed the initial list of elements. The panelists were requested to refine the list of elements by one of the following procedures: (1) modifying the elements in any manner; (2) adding elements to the list; (3) deleting elements; or (4) discarding the list and submitting a new list of the panelist's own design.

The results of the first round of the modified Delphi procedure were analyzed and summarized. A revised list of elements was developed. On the succeeding rounds, the panelists were asked to rate the importance of each element on a four-point scale. After the second round and continuing with each ensuing round, the median rating and interquartile range of the responses for each element on the preceding round were displayed for the panelists. The procedure continued until a consensus was reached on a majority of the items. A consensus was considered reached when the variance of the ratings of a majority of the items reflected no statistically significant change from the variance of the ratings on the preceding round.

Administration of the Final Questionnaire

The final result of the modified Delphi study was a revised list of elements of effective inservice education. Each element was listed with a Likert type scale to rate the degree of presence. The list of elements was administered to teachers of public schools in Texas. Every public school district in Texas listed in the 1985-86 Public School Directory was represented in the survey (Texas Education Agency, 1985). The first elementary school and the first secondary school listed beneath each school district were chosen for the survey. A questionnaire was sent to the principal of the identified schools, accompanied by a letter requesting that the principal give the questionnaire to one teacher in his/her school. The questionnaire included a cover letter which described the results of the modified Delphi procedure, explained the purpose of the questionnaire, and provided directions for rating the list of elements. Confidentiality was assured and a self-stamped, addressed envelope was provided for the return of the responses. Responses were tabulated in order to apply the statistical techniques appropriate for the purposes of this study.

Definition of Terms

Delphi technique is defined by Harold Sackman as a research technique which originated at Rand Corporation with related studies starting in 1948. Delphi is an attempt to elicit expert opinion in a systematic manner for useful

results. It usually involves iterative questionnaires administered to individual experts in a manner protecting the anonymity of their responses. Feedback of results accompanies each iteration of the questionnaire, which continues until convergence of opinion, or a point of diminishing returns, is reached. The end product is the consensus of experts, including their commentary, on each of the questionnaire items, usually organized as a written report by the Delphi investigator (1975:xi).

Elements of inservice education are the strategies, processes, procedures, and techniques utilized in inservice education.

Expert is one whose knowledge and experience make him/her an authoritative specialist.

Inservice or inservice education has been defined by the Texas State Board of Education as a planned program of learning opportunities for staff already held or assigned positions (Rule 19).

Inservice education has also been defined by Zigarmi, Betz, and Jensen as "individually-planned and/or school-planned activities for the improvement of instruction and/or the professional development of staff members" (1977:545).

Iterative questionnaire is a repeated questionnaire.

Modified Delphi technique is, for the purposes of this study, altering the first phase of the Delphi technique by beginning with a list of elements from the literature rather than asking the panelists to formulate an original list.

Preservice is the education or training that a teacher receives prior to becoming a certificated teacher.

Staff development is used synonymously with inservice education in this paper.

Basic Assumptions

This study was based on the following assumptions:

1. The participating Delphi experts are experts in inservice education.
2. The reported consensus was obtained through valid and reliable procedures.
3. Experts provide a significantly better opinion than nonexperts.
4. The teachers surveyed in this study accurately responded to the questionnaire.
5. The questionnaires utilized in this study were valid instruments.

Limitations of the Study

The utilization of a modified Delphi technique placed certain limitations on the study. The very definition of expert demands a relatively small sample of panelists. Since the Delphi technique requires iterative questionnaires, some dropout of the panelists occurred.

Another limitation of the study was limiting the survey to Texas teachers. This causes the researcher to limit any conclusions made regarding the presence of these elements to Texas.

Procedure of Treating Data

The data were analyzed in order to answer the research questions of the study. This was accomplished by analyzing the responses of the Delphi panelists and teachers in order to determine the elements of effective inservice education and their presence in the field.

After administering the first questionnaire the statements were revised according to the input of the Delphi panel. Questionnaire #2 consisted of a revised compilation of the statements regarding the elements of effective inservice education. The panelists were asked to rate each element from unimportant to important. The data from this questionnaire were coded and aggregated. The interquartile range, median, and variance were calculated by computer for each element. Questionnaire #3 indicated the aforementioned data calculated from Questionnaire #2. The panelists were asked to again rate each element taking into consideration the responses of the panel as a whole. The data were again collected and reported in the same manner.

The item variances were then compared to the variances of the previous iteration utilizing Snedecor's F-test in order to determine if there had been a significant difference between the ratings of the two questionnaires. This procedure continued until there was no significant difference on a majority of items from one iteration to the next. At that point, a consensus was achieved.

A list of strategies for effective inservice education was then derived from this modified Delphi study. All of the statements from Questionnaire #3 for which there was no significant difference were included in this list of strategies.

Next the survey of teachers was conducted in order to determine the presence of these elements in the field. The presence was rated on a five point scale from nonexistent to very evident. The mean ranking of each element was then calculated.

Chapter 2
REVIEW OF LITERATURE

Introduction

This section is a limited review of the research and literature relative to the identification of elements of an effective inservice education program. This section helps to gain insight into the perceptions and investigations of various authors relative to the topic through a review of relevant periodical articles, books, and other research. The review focuses on the historical perspective of inservice education and the planning, presentation, procedures, and evaluation of inservice education.

Historical Perspective

Teachers of both the past and present have expressed a need and a desire for further professional growth. The continuing changes of society and culture, changes in the knowledge about human growth and learning, and the ever-increasing knowledge of teaching methods all present the need for continuous and dynamic teacher inservice education (Tunnell and Barnes, 1963:4- 6). Teachers simply need help with the increasing complexity of problems which confront the schools Organization for Economic Cooperation and Development, 1982:5).

Although teachers of all times have engaged in unplanned professional growth activities such as reading and peer interaction, formal and planned inservice education can be traced back to the 1850's in the United States. From the 1850's through the 1870's inservice education was remedial in nature and entailed two to three day institutes or short courses. The content of these courses consisted mainly of reviews of arithmetic, spelling, geography, and history, with some comments on discipline and approaches to teaching reading, writing, and arithmetic. Both veteran and new teachers attended these institutes since most of the teachers during that time period had little or no preservice education (Tyler, 1971:6-7). The Morrill Act and the Land Grant College Act of 1862 helped to establish colleges for agricultural and mechanical classes. This legislation eventually brought about new students, new knowledge, methods, and applications for student learning which resulted in new needs for inservice education (Tyler, 1971:8).

The most important inservice education in America from 1880 until World War I was the summer course in normal schools. The area of concentration continued to be content. However, the heavy influx of immigrants from 1870 through World War I resulted in some new topics. Then came a wave of new ideas: Darwin, Dewey, Montessori, new educational problems, and new subjects (Tyler, 1971:8).

After World War I and the Great Depression, new standards for teaching certificates were imposed. Teachers were required to obtain a bachelor's degree. Inservice education then attempted to remediate the college courses of study (Tyler, 1971:10).

The Eight-Year Study of 1933 called for the development of new programs to reach all high school students. By 1939 colleges of teacher education focused on these new programs. Teachers then felt a need to develop curriculum and teaching methodologies for these new programs. The advent of "make-and-take" workshops commenced. Teachers began creating instructional resource units for these new programs (Tyler, 1971:13).

World War II brought about a teacher shortage and inservice education was again faced with filling the gaps of teacher certification requirements. The movements of desegregation and help for the disadvantaged in the 1960's and 1970's focused inservice education on the human development skills required to implement national efforts (Tyler, 1971:13).

During the period of 1950 through 1960 there was a preoccupation across the nation with school facility programs and hiring new personnel in order to accommodate the increasing student population. Next the National Defense Education Act and the National Science Foundation began to call attention to inservice education, although these efforts were narrow and not keyed to individual or local needs (Harris, 1980:30).

Many new federal education programs addressed inservice education, but with little continuity and much duplication of objectives and staff. Bilingual education, special education, early childhood, and migrant education all dealt with inservice education to some degree (Harris, 1980:30). Other federal efforts toward improving inservice education included teacher centers and a Teacher Corps (Harris, 1980:31).

The Education Professions Development Act of 1964 was an extraordinary national effort to support professional development and reduce the fragmented efforts. However, this act was not supported by the executive and legislative branches and expired a few years later (Harris, 1980:31).

Until the late 1970's teacher inservice education was not a major concern of most teacher education colleges. There was little continuity, no clearly defined goals, and meager funding. However, state and federal funds began to encourage new inservice education efforts. Various states and national organizations initiated several major studies in the mid-1970's. In 1975 the Rand Corporation conducted a four-year two-phase study which examined over 300 educational innovations in order to determine reasons for their success or failure (ERIC, 1980:182). In 1976 the National Center for Educational Statistics commissioned Bruce Joyce to do an inservice education study. This was followed by several others (Hite and Howey, 1977:3).

The National Council of States on Inservice Education was organized in 1976. The organization now concentrates on educational change and reform, staff development, and learning technology (National Council of States on Inservice Education, 1986).

The declining birth rate and school consolidations have reduced the number of teachers needed in the field. This change in supply and demand of teachers has necessitated promoting the growth of existing faculties (Alfonso, Firth, and Neville, 1981:395).

Elements of Effective Inservice Education

Literature revealed many common perceptions of the characteristics of effective inservice education. An examination of these characteristics is not limited to the training phase alone, but also includes the very important events that occur before and after the training. Much has been written about various aspects of the planning, the presentation, the procedures, and the evaluation of inservice education which contribute to its effectiveness.

Planning for Inservice Education

Literature overwhelmingly indicated that collaborative planning is vital to an effective inservice education program (Burrello and Orbaugh, 1982:385; Sparks and Schiff, 1986:1; Berman and Friederwitzer, 1982:53; Hager, 1980:10; Jensen, Betz, and Zigarmi, 1978:10). According to Loraine Thompson, active teacher involvement in inservice education planning is emphasized in the literature more than any other aspect (1984:9). Teachers are more motivated to learn and acquire new skills if they participate in the planning and organization of their own inservice. The teachers and administrators should cooperatively plan the design, coordination, and continuity of programs (Hager, 1980:10). Wilen and Kindsvatter suggested that teachers should plan the goals, content, and approach for inservice education (1978:55).

The involvement of teachers in planning inservice education is crucial for the success of the program. Teachers are more willing to change if they have helped to define their own problems, needs, and solutions. Teachers are the key change agents in the school. They do not change due to the opinion of an administrator, but rather because they feel the need and desire to change (Yeats, 1976:417).

Betty Dillon-Peterson reiterated this same idea when she stated: "Because teachers tend to teach as they were taught, significant change is difficult, but it can be facilitated through their own personal analysis, determination of direction, and commitment to specific efforts that are supported over time with adequate resources" (1986:34-35).

The Rand Change Agent study showed that collaborative planning with teachers and administrators giving equal input led to more successful inservice education than that planned solely by either group (Thompson, 1984:9). The shared commitment and support of both teachers and administrators are keys to the success of the program.

Authors found that this process of collaborative planning should begin with a needs assessment (Berman and Friederwitzer, 1982:53; Burrello and Orbaugh, 1982:385; Hager, 1980:10). Inservice education programs should correspond with the strengths, weaknesses, concerns, and interests of the participants (Burrello and Orbaugh, 1982:385). However, it is crucial to beware of mere interest inventories (Harris, Bessent, and McIntyre, 1969:5). Staff development planners should also keep in mind that staff needs are constantly changing and thus monitor these needs and make appropriate adjustments in inservice education programs.

In addition to individual needs, district and building needs also must be considered (Dillon, 1972). Other authors suggested basing the inservice education program on not only the needs of teachers, but also the needs of students and administrators (Sawyer, Girard, Wiegand, 1977:111). Hager additionally recommended seeking input from parents regarding needs for teacher inservice education (1980:10).

The Ohio University Teacher Corps project utilized an effective trilevel needs assessment which consisted of the following steps:

1) Direct contact with the teachers
2) Contact with the instructional leaders
3) Classroom observations by university faculty (Mangieri and McWilliams, {1976:111}.

Teacher evaluation has also been suggested as a key factor in determining needs for inservice education. Since teacher evaluation and inservice education share the common goals of improving professional performance, improving school programs, and identifying and meeting professional and personal needs, it follows that the two should be linked together (Stephens and Thompson, 1977:6).

Literature disclosed that the entire staff should react to the needs assessments by establishing goals and specific objectives for inservice education (Jensen, Betz, and Zigarmi, 1978:11). The ensuing goals and objectives for inservice education should be clearly stated and focused to the effort so that all staff members understand the purpose of the inservice education program (Hager, 1980:10; Bush, 1971:66; Lawrence, 1974:14). These goals should be both short and long-range goals (Sawyer, Gerard, and Wiegand, 1977:111).

Several authors have also emphasized the importance of individual goal-setting for inservice education for each teacher (Dillon, 1972: ; Lawrence, 1974:5; Hall and Loucks, 1982:20). Self-initiated, self-directed, individualized training may lead to greater learner satisfaction. Adult learners prefer individualization so that they can utilize the experiences which they have (Saskatchewan Interagency Professional Development Committee, 1985).

Judy-Arin Krupp (1982:197) emphasized the importance of individualized goals and objectives when she stated: "Learners must recognize a deficiency or need in self when defining a goal. They must want to eliminate the deficiency to meet the need and must perceive the learning situation as a means to that end".

Various planning models and strategies have been developed in the field of inservice education. These planning models incorporate many of the aforementioned ideas related to inservice education.

Wood, McQuarrie, and Thompson outlined important aspects of inservice in their planning model (1982:29):

Stage II: Planning

9. Differences between desired and actual practices in the school are examined to identify the inservice needs of the staff.
10. Planning of staff development activities relies, in part, on information gathered directly from school staff members.
11. Inservice planners use information about the learning styles of participants when planning staff development activities.

12. Staff development programs include objectives forinserviceactivities covering as much as five years.
13. The resources available for use in staff development are identified prior to planning inservice activities.
14. Staff development programs include plans for activities to be conducted during the following three to five years.
15. Specific objectives are written for staff development activities.
16. Staff development objectives include objectives for attitude development (new outlooks and feelings).
17. Staff development objectives include objectives for increased knowledge (new information and understanding).
18. Staff development objectives include objectives for skill development (new work behaviors).
19. Leadership during the planning of inservice programs is shared among teachers and administrators.

Hite (1977:18) suggested the following steps in inservice planning:

1) Define the purposes
2) Analyze the limits
3) Design the program components

Creekmur (Texas Education Agency, 1978:29) suggested that planning should include the following:

1) Written goals for inservice
2) A systematic process for organizing inservice topics
3) The use of evaluation results
4) A budget

Presentation of Inservice Education

Literature, also revealed various characteristics of effective inservice education related to the actual presentation of the inservice education program. The methods of presentation are very vital to the success of staff development programs.

First of all, the variety of learning styles of adult learners must be taken into consideration (Thompson and Wood, 1982:34; McCarthy, 1982:20). The Rand study found that inservice education program planners should consider that adults have very different learning styles and different learning rates (McLaughlin and Marsh, 1978:87). At different stages of career development teachers may benefit from different types of staff development (Fielding and Schalock, 1985:7). McCarthy advocates using techniques in inservice education applicable to the four different learning styles twenty-five percent of the time (1982:20).

Thompson and Wood also found that most adults prefer concrete learning experiences and an informal learning environment which facilitates social interaction (1982:34). The subject matter should be concrete and aimed at specific skills (ERIC, 1980:184). Few inferences should be made so that the skills are easy for teachers to observe (Gall, Renchler, Haisley, Baker, and Perez, 1985:7).

Literature also indicated that a variety of delivery modes can lead to successful staff development programs (Rubin, 1971:239). Active rather than passive techniques were indicated as most effective (Harris, Bessent, and McIntyre, 1969:35; TEA, 1978:9; Lawrence, 1974:7).

There are many different types of inservice. The various activities of inservice were compiled in rank order according to the degree of usefulness as perceived by a sampling of South Dakota teachers in 1975.

The types of inservice education are listed below in descending order of usefulness (Zigarmi, Betz, and Jensen, 1977:550):

1. Two-week summer Current Trends workshop sponsored by DESE and SD colleges and universities
2. Assistance from another teacher in your classroom
3. Workshops carried out on a college or university campus
4. Observation of teachers in other school systems
5. Observation of teachers in your school system
6. Special college courses conducted at your school by a college or university.
7. Workshop-block of time set aside during the summer for intensive study of an educational problem in your school
8. Conference or workshop sponsored by professional teacher organization
9. SDEA Helpmobile
10. Reading professional education journals
11. Local faculty meeting planned by teachers and administrators specifically for inservice
12. Convention sponsored by teachers organization
13. One-day regional workshops involving several school systems
14. Local faculty meeting planned by teachers specifically for inservice
15. Bulletins, newsletters, and brochures
16. Workshop-block of time set aside during the school year for intensive study of an educational problem in your school
17. Full-day inservice program conducted by an outside consultant
18. One-two hour inservice program conducted by an outside consultant
19. Half-day inservice program conducted by an outside consultant inservice
21. Presentations by educational sale representatives

Harris conducted a similar study, ranking inservice education activities in order of experience impact (1980:80-81):

Firsthand experience
Guided practice
Microteaching
Structural role playing
Therapeutic interviewing
Analyzing and calculating; spontaneous role playing; group therapy; videotaping or photographing, testing

Problem solving interviewing
Buzz session
Reading
Brainstorming
Observing systematically in classroom
Social interaction
Demonstrating; material, equipment viewing;
meditating; writing or drawing
Discussing, leader facilitated
Discussing, leaderless; film, T.V., filmstrip
viewing
Visualizing; interviewing, informative
Panel presenting
Tape, radio, record listening; lecturing (Harris, 1980:80-81)

Wade found that independent study produced the greatest effects on teacher learning and concluded that other very effective methods include observation of teaching practices, microteaching, video/audio feedback, and practice (1984:52). Sparks advocated that inservice programs should include presentation, demonstration, practice, and feedback (1983:71). Collegial support groups were thought to be most effective by Rodriguez and Johnstone (1986:99). Other authors have suggested teacher centers, clinical supervision, and job-imbedded approaches as effective modes of instruction for inservice education (Lippitt and Fox, 1971:185; Hite and Harvey, 1977:48).

The type of inservice education activity utilized should be planned according to teacher needs, available resources, learning styles, and past evaluations of types of inservice activities. The particular teaching behavior to be addressed also may make different types of inservice more desirable over others (Bush, 1971:59).

Literature also revealed the importance of modeling effective teaching strategies in inservice education programs (Wilsey and Killion, 1982:8; Patton and Anglin, 1982:168). Learning experiences for adults should be based on the principles of effective learning and should exemplify the effective learning strategies suggested for students (Berman and Friederwitzer, 1982:52). These strategies should be applied to adult learning theory in order to meet the adult learner's needs (Wilsey and Killion, 1982:36).

The content of inservice programs also has been widely discussed. Several authors wrote that the content of inservice programs should be limited to changing teachers' behaviors rather than the pupils' behaviors (Burrello and Orbaugh, 1982:386; TEA, 1978:10; Lawrence, 1975:13). Others wrote that the content should be based on improving the instructional program (Harris, 1980:15; Wood, McQuarrie, and Thompson, 1982:28; McLaughlin and March, 1978:90). Some authors suggested that subject matter content be combined with teaching methodology (Berman and Friederwitzer, 1982:54). Sparks and Schiff recommended that effective teaching research and new curriculum materials and strategies be an integral part of the inservice program (1986:1). Whatever the

case, the content should be linked in some way to the daily operation of the school (Sawyer, Gerard, and Wiegand, 1977:111).

According to Jay Greene, the content of inservice should cover the following: understanding the role of the school, curriculum, human growth, teacher methods, educational materials, communication skills, problem solving, and group processes skills (Greene, 1971:271).

Procedures for Inservice

Certain procedures have been identified in the literature as contributing to effective inservice education. In addition to planning and presentation techniques, inservice planners should also pay careful attention to various procedures which have been widely accepted as vital to staff development programs.

Peer teaching has been widely accepted as a very effective means of inservice instruction (Rubin, 1978:295; Lawrence, 1975:1; Jensen, Betz, and Zigarmi, 1978:12). Not only are teachers more accepting of their peers, but this is also a very cost effective and efficient strategy. These personnel are available at all times for continuing support, assistance, and encouragement (Berman and Friederwitzer, 1982:54). In addition to this, peer teaching benefits the presenters by improving their self-esteem and their own teaching competencies (Wilson, 1978:278; Bush, 1971:66). Although some researchers advocate colleges and universities as the major source for consultants (Wilen and Kindsvatter, 1978:394), others most definitely cite practicing teachers as preferable to professors of theory (Rubin, 1978:9). Regardless of the size of the district, resources exist within the district for inservice education (Dillon, 1986:35).

Another key element of effective inservice education is administrative support, leadership, and participation (Hager, 1980:10; Wood, McQuarrie, and Thompson, 1982:29). Both logistical and psychological administrative support are necessary (Sparks, 1986:7). Administrators can foster staff development programs by allocating funds for inservice (Wilen and Kindsvatter, 1978:393), by publicizing and requesting information about inservice, (Sparks, 1986:7), and by being involved in both a teaching and learning role (Sawyer, Gerard, and Wiegand, 1977:111). The participation of the principal is extremely vital (ERIC, 1980:182), as the skills presented simply will not be used if not recognized and valued by the principal (Rubin, 1978:296). Relative to this administrative support is facilitating in immediate applicability and continuity of the program (Auton, Deck, and Edgeman, 1982:118; Harris, Bessent, and McIntyre, 1969:42).

Another aspect of inservice frequently mentioned in the literature was the providing of incentives. Extrinsic rewards such as mandated rules, certification, salary, stipends, sabbatical leaves, and compensatory time, seem to result in less commitment to the system. Intrinsic rewards, such as the desire to become a better teacher appear to have a more lasting effect (Palmer, 1978:216-217). Some authors favored financial compensation for those inservice activities which take place outside the school day (Wilen and Kindsvatter, 1978:395), while others preferred offering activities on regular workdays and providing release time

(TEA, 1978:10). Wade discovered that participation was more beneficial if teachers were selected on a competitive basis for inservice activities (1984:52-54). Recognition and publicity of teacher inservice events also were cited as effective incentives (Wilson, 1978:279; Fischer, 1971:239). Other authors recommended both extrinsic and intrinsic rewards (Stephens and Thomson, 1977:5).

The time for inservice education also has frequently been mentioned in the literature. Several authors agreed that activities should be conducted during participants' normal working hours (Burrello and Orbaugh, 1982:386; Wilen and Kindsvatter, 1978:395; Jensen, Betz, and Zigarmi, 1978:12; Rubin, 1978:294; Berman and Friederwitzer, 1982:54).

Evaluation of Inservice

Literature also emphasized the importance of evaluation of inservice. Most often the evaluation is opinionative in nature (TEA, 1978:31). Some authors suggested not only evaluation of the process of inservice, but also evaluation of the participants and the effects of the program on student achievement (McDonald, 1978:39; Berman and Friederwitzer, 1982:54). Some authors recommended preassessment and postassessment of the participants (Rubin, 1978:295), although this is a rare practice (TEA, 1978:31). Others wrote that the evaluation design should address planning, implementation, and dissemination (Burrello and Orbaugh, 1982:386).

Frederick J. McDonald stressed that the evaluation should be planned cooperatively with the teachers (1978:37). He further stated that the evaluation should measure to what degree the new innovation has been adopted, and if the change has had an effect on student learning (1978:33). Other authors recommended observation and evaluation of teachers in order to evaluate the change in teaching behaviors (Gall and Renchler, 1985:4; Rubin, 1978:294).

William H. Wilen and Richard Kindsvatter wrote that evaluation should be conducted immediately following the program and then again after a period of time in order to measure the sustained effects (1978:56). Harris, Bessent, and McIntyre recommended that evaluation take place while the inservice program is in progress and at the end (1969:5). Both short and long-term evaluations were cited as important by other authors (Sawyer, Gerard, and Wiegand, 1977:112).

Harris also suggested the use of more than one data source in inservice education evaluation. He especially favored personal interviews as revealing more information than the typical questionnaires (1980:149). Wade found that there are no significant effects of neither the length nor the scheduling of inservice education activities (1984:50-51), while Sparks recommended conducting sessions two to three weeks apart (1983:71).

The literature indicated support for ongoing, long-term inservice education programs, rather than isolated , short-term activities (Dillon, 1986:35; Lawrence, 1974:5; Berman and Friederwitzer, 1982:53). Consultants hired on a one-day basis were judged as ineffective due to their lack of knowledge of the district and the lack of follow-up and supportive activities (Lippitt and Fox, 1971:136) and continuity via coaching (Fielding and Schalock, 1985:19).

The site for inservice education is another very crucial factor. First of all, space for various subgroups, easy materials distribution, and adequate seating arrangements are of utmost importance (Harris, 1980:86). There should be minimal environmental distractions (Patton, and Anglin, 1982:168). Most authors recommended school-based inservice education programs (Auton, Deck, and Edgemon, 1982:118; Rubin, 1978:300; Dillon, 1986:35), while Lawrence divulged that more complex behavior changes in teachers are more likely to take place at the school than on a college campus (1974:8).

A few other miscellaneous procedures were cited in the literature as having an impact on the effectiveness of the program to some degree. Get acquainted activities (Jensen, Betz, and Zigarmi, 1978:12), name tags and snacks at breaks (Harris, 1980:86) were also suggested. A timeline for each phase of inservice also was recommended (Jensen, Betz, and Zigarmi, 1978:12).

Presence of the Elements in the Field

Literature revealed that although the elements of effective inservice education programs are widely recognized, this knowledge is not always utilized to improve staff development (Stephens and Thomson, 1977:1; Burrello and Orbaugh, 1982:385; TEA, 1978). Many inservice programs still lack some of the very basic key elements of effective inservice education.

Several authors have written that teachers are not satisfied with inservice education (Sportsman, 1981:307; Cawelti and Reavis, 1980:236; NEA, 1977). Teachers are very concerned with the relevancy of inservice and typically poor inservice practices (Lippitt and Fox, 1971:135), and they do not perceive inservice programs as successful (Dean, 1981:4862A).

Various authors cited some of the shortcomings of inservice. One of the most commonly expressed complaints has been that inservice is simply not related to the needs of the participants (Harris, Bessent, and McIntyre, 1969:4; Lippitt and Fox, 1975:135; Bush, 1975:37; Roth, 1980:15). Perhaps this irrelevancy can be attributed to the very rudimentary needs assessments utilized in the field (Dillon, 1976:169). The presenters of inservice programs use educational jargon excessively and often lecture about unattainable goals (Wagoner, 1978:10). Presenters often overlook the human skills of teaching and expound upon theory rather than to provide practice and participation in these skills (Palmer, 1978:8; ERIC, 1980:184). Inservice programs lack continuity and the time for teachers to think through new practices (Rodriguez and Johnstone, 1986:94); Palmer, 1978:8). Insufficient funds, staff, and resources also are prohibitive to successful inservice education (Harris, Bessent, McIntyre, 1969:4; Meade, 1971:220). Another major shortcoming of inservice education is that most districts fail to provide intrinsic rewards (Rodriguez and Johnstone, 1986:94).

Summary

The literature surveyed indicated some general agreement of the elements which comprise an effective inservice education. Various aspects of the

planning, presentation, procedures, and evaluation of inservice education are vital to its success. It does not, however, appear that this knowledge is being applied in the field, as teachers continue to express dissatisfaction with inservice education programs. The disparity between the research and practice must be resolved in order to offer quality teacher inservice.

Chapter 3

RESEARCH METHODOLOGY

This chapter is comprised of a detailed description of the process used to develop the initial list of elements, the manner in which the Delphi technique was employed to validate the list, and the procedure utilized to administer the revised list to the population. An analysis of the Delphi panelists' expertise, an analysis of their responses, and a description of the statistical procedures used to select the elements for the final questionnaire are also included.

Development of the Initial List of Elements

After reviewing background literature and other research papers, the initial list of elements of effective inservice education was developed. Each member of the modified Delphi panel had the opportunity to give input as to how each element was stated. The initial list consisted of twenty-five elements.

Use of the Delphi Procedure for Validating the List of Elements

The key objective of the Delphi technique is to reach a group consensus among alternatives. The Delphi procedure is anonymous and is accompanied by some measure of central tendency, and some measure of dispersion (Sackman, 1975:9). It involves soliciting opinions from a panel of experts in a series of iterative questionnaires. After each round, the panelists are presented with the statistics of the previous round and are asked to respond again to the questionnaire. The technique continues until a consensus is reached. A consensus is considered to have been reached when there is no significant difference found on a majority of the responses of the most recent iteration and those of the previous iteration.

Delphi Round One

After developing the initial list of elements, the selection of the panel of experts began. Authors of substantial articles related to inservice education, state directors of inservice education, and the National Council of States on Inservice Education were contacted to nominate inservice education leaders from one of the following groups: educational administration professors with a specialization in inservice education; local, state, and regional directors of inservice education; or authors of books and articles related to inservice education. Along with the letter of invitation, each panelist received a panelist approval and information form to complete, a set of directions for revising the list of elements, the tentative list of elements, and a return addressed and stamped envelope.

The panelists were asked to refine the list of elements by one of the following procedures: (1) modifying the elements in any manner, (2) adding

elements to the list, (3) deleting elements, or (4) discarding the list and submitting a new list of the panelist's own design. Of the sixty panelists invited to respond, twenty-five responded to the initial list of elements.

Although all the respondents completed an information form, all did not complete each section of the form. The panelists had a wide range of experience and education. Masters degrees were held by 28% of the panelists, while 32% had earned a PhD and 24% had earned an EdD. The remaining 8% indicated that they held some other degree and the other 8% did not respond to this portion of the form. The position of local inservice director was held by 40% of the panelists, while 16% were regional directors, 12% were state directors, 4% were professors, 20% were authors, and 8% did not respond to this portion of the form. Their years of experience with inservice education ranged from a high of 25 to a low of 4, and averaged 12.04 years. The number of conferences related to inservice attended ranged from 0 to 50, with an average of 7.35. The panelists' number of publication credits ranged from a high of 71 to a low of 0 and averaged 8.77.

The panelists' recommendations from Round One were examined, revised, and incorporated into a refined list of twenty-nine elements. A rating scale ranging from one to four in order of importance, one being not important to four being very important was placed beneath each element.

Delphi Round Two

The refined list of elements of effective inservice education was mailed to the twenty-five panelists, along with a letter of explanation, and a return addressed and stamped envelope. The letter requested that the panelists rank the importance of each element for an effective teacher inservice education program.

On the second round of the Delphi investigation, fifteen panelists returned the list of elements for a 64 percent rate of return. The responses were then calculated by computer and statistically analyzed. Since the interquartile range reflects the degree of consensus relative to an item on a Delphi questionnaire (Sackman, 1975:9), the interquartile ranges and variances were calculated for each element When utilizing Likert-type scales for rating importance, the median represents the group's level of agreement regarding the importance of an item (Wilkins, 1985:40). Round Two resulted in varying degrees of consensus relative to each item. The interquartile range (Q3 minus Q1) was from .571 for the highest degree of consensus to 1.429 for the least degree of consensus. The medians ranged from 3.929 for a high level of importance to 2.875 for a low level of importance. These ranges indicate the extremes of agreement and disagreement expressed by the Delphi panelists. The means and variances of the twenty-nine elements were calculated for the purpose of comparison with the ensuing rounds. The means of all items were greater than 2.0. The variance ranged from a high of .8408 to a low .1169. Since the variance is a measure of dispersion, the ratio of variance from one round to another can be used to determine if the change in dispersion is significant (Wilkins, 1985:42).

The list of elements was reprinted with the first quartile, the median, and the third quartile indicated below the rating scale for each element The panelists were able to see the interquartile range and median of each element.

Delphi Round Three

For Round Three, the sixteen panelists were given the median, interquartile range, and their own personal Round Two ratings for each element. They were asked to consider the feedback provided and to then rate the importance of each element in order to reach a group consensus. The panelists were also asked to provide reasons for any ratings outside the interquartile range.

For this round, fifteen of the sixteen panelists responded to the questionnaire for a 93.7 percent rate of return. The responses for Round Three were then calculated by computer and statistically analyzed. The first quartile, the median, the third quartile, mean, and variance were computed for each element.

The data from Round Three indicated varying degrees of consensus on the twenty-nine elements. The interquartile range was from .500 for the highest degree of consensus to 1.173 for the least degree of consensus. The medians ranged from 4.000 for a high level of importance to 2.714 for a low level of importance. These ranges indicate the extremes of agreement and disagreement of the panelists on Round Three. Twenty of the twenty-nine items had a smaller or equal interquartile range on Round Three in comparison to Round Two. According to Binning, Cochran, and Donatelli (1972:26-29), a decrease in the size of the interquartile range on successive rounds indicates greater group consensus.

Next Snedecor's F-test for the ratio of variance between Round Two and Round Three was used for each element in order to determine if further rounds were necessary. The variance of responses between Rounds Two and Three were calculated. The calculated F was derived from the ratio of variances and compared to the required F at the .05 level of significance in order to determine if there was a significant change in the ratings between Round Two and Round Three. In all of the items, the calculated F was less than the required F, thus indicating no significant change in the variance of responses between Round Two and Round Three. Therefore, further rounds would not significantly narrow the consensus. A mean rating less than 2.0 for any element would have indicated unimportance of the element and the element would have been deleted from the final list. However, all elements had a mean greater than 2.0 and thus were retained in the final list of elements administered to Texas public school teachers. The final list of elements is an effective strategy for inservice education according to the Delphi panel.

Administration of Final List of Elements

The population for the final phase of the study was selected from the 1985-86 Public School Directory (Texas Education Agency, 1985). Every public school district in Texas was represented in the survey. A questionnaire and a letter were sent to the principal of the first elementary and the first secondary school listed beneath each of the 1,071 school districts in the Texas Public School Directory. A total of 2,142 questionnaires were distributed. The principal was requested to give the questionnaire to one teacher in his/her school.

The questionnaire included a cover letter which described the results of the modified Delphi procedure, explained the purpose of the questionnaire, and provided directions for rating the list of elements. A return addressed and stamped envelope accompanied the letter. The response of the 720 teachers represented 33.6 percent of the population

Summary

An initial list of elements of effective teacher inservice education was developed from related research and literature. This list was composed of twenty-five elements. The Delphi technique was used to validate this list. As a result of the input from the Delphi panelists, four more elements were added. According to the results of Snedecor's F-test for ratio of variances, a consensus had been reached after the third Delphi round. Therefore, all of the elements were included in the final list, which was administered to teachers representing every Texas public school district. The teachers rated the degree of presence of each element in their teacher inservice programs. The return rate of Texas public school teachers was 33.6 percent.

Chapter 4
PRESENTATION OF THE DATA

This chapter includes the presentation and analyses of data obtained from the responses of the modified Delphi panel and the questionnaires returned by Texas public school teachers. The data from the Delphi panel were processed at the East Texas State University Computer Center, while the data from the teacher questionnaires were processed on the researcher's microcomputer and scanning machine.

A modified Delphi technique was used to validate a list of twenty-five elements of effective inservice education which were derived from the literature (Sackman, 1975:9). The analysis of data from each Delphi round in which panelists were asked to rank the elements from one to four, a rating of one being not important to four being very important with a Likert- type scale, resulted in a refined list of twenty-nine elements of effective inservice education. A total of four elements were added. This refined list resulted as a strategy for effective inservice education, which answers the third research question of this study.

The list of elements of effective inservice education was developed during the summer semester of 1986, with the last Delphi round being accomplished during the fall semester of 1986. The ratings of teachers of each element were gathered and processed during the spring semester of 1987, to answer the research questions of this study. The related findings are described in this chapter.

Testing of the Research Questions

The study was concerned with determining the elements of effective inservice education and the degree of presence of these elements in the field of teacher inservice education in Texas public schools. From this information, a strategy for effective teacher inservice education was then developed.

There were three research questions. Research question one was posed as follows: According to inservice education experts, what are the elements of effective inservice education? Research question number one was tested via the modified Delphi technique. Since there was no significant difference between the second and third Delphi rounds, the elements of the final Delphi round were considered to be important for effective teacher inservice education.

Research Question Two

Research question two was posed as follows: To what degree are each of these elements present in the field as reported by Texas public school teachers? The data provided by the teachers in response to each element were analyzed by computing the existence mean score and the rank of each element.

The purpose of research question two was to find the degree of existence of each element of teacher inservice education in Texas public schools. Table 1 shows the twenty-nine elements of effective teacher inservice education in order of existence in Texas teacher inservice education programs.

Table 1
Elements of Effective Teacher Inservice Education
in Order of Existence in the Field

Rank	Element
1	Element 21. Whenever possible and desirable to participants, inservice education programs are conducted during participants' normal working hours.
2	Element 13. The primary focus of inservice education programs is to improve the instructional program and to support the professional growth of teachers.
3	Element 6. Each teacher sets individual goals and objectives for professional growth.
4	Element 3. Needs for inservice education are determined from a variety of data sources including self-perception, evaluation documents, student achievement data, legal mandates, school and district goals, as well as participant interests.
5	Element 20. Whenever practical, inservice education programs are school-based, but also provide for district-wide awareness programs.
6	Element 11. The content of inservice education programs is aimed at changing teachers' behaviors as a preliminary step to changing pupils' behaviors.
7	Element 16. Administrative support, leadership, and "coaching", and participation are part of inservice education programs.
8	Element 14. Inservice education programs model effective teaching strategies.
9	Element 2. Generally, inservice education programs respond to the strengths, weaknesses, and interests of the participants.
10	Element 9. A variety of delivery modes are used in inservice education programs.
11	Element 23. The evaluation of inservice education addresses planning, implementation, and maintenance.

12	Element 12. Inservice education programs combine subject matter content with modeling desirable teaching methodologies.
13	Element 29. One purpose of the evaluation is to reassess a need for the inservice education program presented.
14	Element 17. Immediate applicability of inservice education programs is planned and implemented.
15	Element 15. When appropriate, peer teaching is used to some degree in inservice education programs.
16	Element 5: Teachers and administrators use information from a needs assessment as one source to formulate clearly stated goals and objectives for inservice education.
17	Element 8. Concrete, hands-on learning experiences are incorporated into inservice education programs.
18	Element 1. Teachers and administrators cooperatively plan the design, coordination, and continuity of the teacher inservice education program.
19	Element 4. The teacher appraisal process is one of the processes used to determine the strengths, weaknesses, and interests of the participants.
20	Element 24. If appropriate, a preassessment and a postassessment of the inservice program content are administered to participants.
21	Element 19. Generally, most inservice education programs are long-term.
22	Element 22. Extrinsic incentives such as stipends, salary, or college credits are provided for teachers to attend inservice education activities outside of the normal contract time.
23	Element 10. More active, rather than passive, techniques are used in inservice education programs.
24	Element 18. Follow-up and continuity of inservice education programs are facilitated.
25	Element 25. The evaluation of inservice education programs is planned cooperatively

	with teachers, administrators, and all other involved personnel.
26	Element 28. The evaluation measures the effect that the inservice education program has had on teacher attitudes, knowledge, and behavior.
27	Element 26. The evaluation is conducted immediately following the inservice program and then again after a period of time in order to measure the long-term effects.
28	Element 7. Individual inservice education plans project 3-5 years in advance.
29	Element 27. The evaluation measures the degree to which the inservice education program has had an effect on student learning.

The overall mean score average was 2.794. On the rating scale, a rating of two was considered as somewhat evident while a rating of three was considered as moderately evident.

Research Question Three

Research question three was stated as follows: What is an effective strategy for inservice education? The twenty-nine elements of effective teacher inservice education validated by the modified Delphi panel are an effective strategy for teacher inservice education. Since there was no significant difference between the responses of the second and third rounds and since all mean responses were greater than 2.0 in importance, all twenty-nine elements were considered as important elements of effective teacher inservice education programs. Therefore, the combined finalized, refined list of elements of effective teacher inservice education is an effective strategy for teacher inservice education.

Comments of Participants

Although the researcher did not solicit comments from the participants, fifteen participants inserted an additional sheet with comments. The comments were related to various areas of concern that teachers had regarding the inservice education programs in their districts.

One area of concern of teachers in smaller school districts was that the planning, delivery, and evaluation of inservice education was directed by the regional service center rather than by the school district. A few commented that the unique needs of their school districts were not met by these regional programs.

Another concern was that very few programs are designed for secondary

teachers. Secondary teachers expressed the desire for more content-specific inservice education training.

All comments conveyed the idea that teacher inservice education programs are boring, dull, and repetitious. One participant described a system that her superintendent devised of requiring teachers to submit identification cards at the end of a session to ensure that teachers stayed for the entire time. A common complaint was the excessive use of lecture in teacher inservice education programs.

Several negative comments were made relative to linking the Texas Teacher Appraisal System with inservice education. One teacher commented that inservice education would now be used as a punitive measure for those teachers scoring less than satisfactory in the appraisal process.

Overall, comments indicated that teacher inservice education programs are a waste of time. Teachers indicated the desire to use the time and money spent for inservice education for curriculum or other individual school projects.

Summary

This chapter has presented an analysis of the data obtained for this study. The data were collected using a list of elements of effective teacher inservice education validated and refined by a modified Delphi technique. The refined list was comprised of twenty- nine elements and a Likert-type scale used to rate the importance of each element. The refined list of elements was administered to one elementary and one secondary school of every school district in Texas listed in the 1985-86 Texas School Directory.

The research questions of the study were answered by the presentation and analysis of the data defined in the administration of the refined list of elements. Data relative to research question one obtained by a modified Delphi procedure indicated that the refined list of twenty-nine elements of effective inservice education were important. Research question two was answered by finding the mean and rank order of each element as to its existence in the field of teacher inservice education in Texas. Comments of participants relative to research question two were also summarized. Basically, the respondents' comments expressed dissatisfaction with teacher inservice education. Data relative to research question three obtained through a modified Delphi procedure revealed that the refined list of elements of effective teacher inservice education were important and therefore, an effective strategy for inservice education.

Chapter 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to identify the elements of effective teacher inservice education through a modified Delphi investigation. Another purpose was to measure to what degree these elements actually exist in inservice education programs as reported by classroom teachers in Texas public schools. Another concern was to develop a strategy for effective teacher inservice A modified Delphi technique was used to validate a list of elements of effective teacher inservice education derived from a survey of the literature. A panel of sixty experts of inservice education from the United States were invited to take part in the study. This panel of experts was asked to indicate the relative importance of each element using a Likert-type scale.

The research data from this modified Delphi procedure resulted in a list of twenty-nine elements of effective teacher inservice education. The Delphi panel refined the researcher's original list of twenty-five elements by adding four elements and by changing the wording of some of the elements.

The refined list of twenty-nine elements of effective teacher inservice education was then administered to one elementary and one secondary Texas public school teacher in each of the 1,071 school districts in Texas listed in the 1985-86 Texas School Directory. A total of 2,142 questionnaires were distributed, and a total of 720 were answered. The return rate was 33.6 percent. The data obtained in this study were processed by the East Texas State University Computer Center and by the researcher's microcomputer and card scanner.

Findings

For the purposes of this study, three research questions were formulated. The findings for these questions are presented in the ensuing paragraphs.

Findings for Research Question One

Research question one asked: According to inservice education experts, what are the elements of effective inservice education? For the purposes of this study the elements of effective inservice education were those that the Delphi panel ranked as important in the final Delphi round in which there was no significant difference in the ratings of the previous iteration. The elements of effective inservice education from importance to unimportance according to the Delphi panel were as follows:

1. Element 17. Immediate applicability of inservice education programs is planned and implemented.
2. Element 19. Generally, most inservice education programs are long-term. Element 10. More active, rather than passive, techniques are used in inservice education programs.

3. Element 26. The evaluation is conducted immediately following the inservice program and then again after a period of time in order to measure the long-term effects.
4. Element 13. The primary focus of inservice education programs is to improve the instructional program and to support the professional growth of teachers.
5. Element 2. Generally, inservice education programs respond to the strengths, weaknesses, and interests of the participants. Element 3. Needs for inservice education are determined from a variety of data sources including self-perception, evaluation documents, student achievement data, legal mandates, school and district goals, as well as participant interests. Element 14. Inservice education programs model effective teaching strategies. Element 16. Administrative support, leadership, "coaching", and participation are part of inservice education programs.
6. Element 1. Teachers and administrators cooperatively plan the design, coordination, and continuity of the teacher inservice education program. Element 9. A variety of delivery modes are used in inservice education programs. Element 12. Inservice education programs combine subject matter content with modeling desirable teaching methodologies. Element 18. Follow-up and continuity of inservice education programs are facilitated.m Element 27. The evaluation measures the degree to which the inservice education program has had an effect on student learning.
7. Element 6. Each teacher sets individual goals and objectives for professional growth.
8. Element 8. Concrete, hands-on learning experiences are incorporated into inservice education programs.
9. Element 11. The content of inservice education programs is aimed at changing teachers' behaviors as a preliminary step to changing pupils' behaviors. Element 25. The evaluation of inservice education programs is planned cooperatively with teachers, administrators, and all other involved personnel. Element 28. The evaluation measures the effect that the inservice education program has had on teacher attitudes, knowledge, and behavior.
10. Element 23. The evaluation of inservice education addresses planning, implementation, and maintenance.
11. Element 5. Teachers and administrators use information from a needs assessment as one source to formulate clearly stated goals and objectives for inservice education Element15.When appropriate,peer teaching is used to some degree in inservice education programs.
12. Element 20. Whenever practical, inservice education programs are school-based, but also provide for district-wide awareness programs. Element 29. One purpose of the evaluation is to reassess a need for the inservice education program presented.
13. Element 21. Whenever possible to participants, inservice education programs are conducted during participants' normal working hours.

14. Element 22. Extrinsic incentives such as stipends, salary, or college credits are provided for teachers to attend inservice education activities outside of the normal contract time. Element 4. The teacher appraisal process is one of the processes used to determine the strengths, weaknesses, and interests of the participants.
15. Element 24. If appropriate, a preassessment and a postassessment of the inservice program content are administered to participants.
16. Element 7. Individual inservice education plans project 3-5 years in advance.

Findings for Research Question Two

Research question two asked: To what degree are each of these elements present in the field as reported by Texas public school teachers? The existence of the elements of effective teacher inservice education in Texas public schools from greatest to least was shown in Table 1.

Unsolicited comments from respondents expressed an overall dissatisfaction with teacher inservice education. Areas of concern were the regional rather than local nature of inservice education and the lack of relevant programs for secondary teachers. Most were concerned with dull, boring inservice education programs, while others were dissatisfied with the punitive role inservice programs are assuming as a result of the Texas Teacher Appraisal System.

Research question three was posed as follows: What is an effective strategy for inservice education? This question was answered using the data gathered through the Delphi investigation. The twenty-nine elements of effective inservice education in refined and validated by the Delphi panelists were all deemed as important through the modified Delphi procedure. Therefore, the combined elements of effective inservice education are an effective strategy for inservice education.

Conclusions

Conclusions were based upon an analysis of the Delphi investigation and the survey of Texas public school teachers. From these bases, the following conclusions were drawn:

1. The Delphi panelists, defined as experts in the field on inservice education, are in agreement on the importance of the identified elements of effective teacher inservice education.
2. The results of the Delphi investigation justify the twenty-nine elements of effective inservice education as important and an effective strategy for inservice education.
3. The findings justify that immediate applicability of inservice education is an area of high importance.
4. The findings justify the high degree of importance of long-term inservice education programs.
5. The findings justify the importance of the use of more active, rather than passive, techniques in inservice education programs.

6. The findings justify the importance of evaluation of inservice education programs immediately following the program and then again after a period of time in order to measure long-term effects.
7. The findings indicate a lesser degree of importance for inservice education plans to project three to five years in advance.
8. The findings indicate a lesser degree of importance of a preassessment and a postassessment of the inservice education program content.
9. The findings indicate a lesser degree of importance of using the teacher appraisal process as a process to determine the strengths, weaknesses, and interests of the participants.
10. The findings indicate a low degree of existence in the field of inservice education of evaluation processes which measure the effect that the inservice education program has had on student learning.
11. The findings show a low incidence of individual inservice education plans which project three to five years in advance in Texas teacher inservice education programs.
12. The findings indicate a low degree of existence in teacher inservice programs in Texas of immediate evaluation of the inservice education program followed by another evaluation after a period of time in order to measure the long-term effects.
13. The findings indicate a high degree of existence in the field of teacher inservice education of inservice education programs conducted during participants' normal working hours.
14. The findings show a high degree of existence in Texas teacher inservice education programs of the focus of inservice education being the improvement of the instructional program and the support of the professional growth of teachers.
15. The findings also show a high degree of presence in the field of teacher inservice education of each teacher setting individual goals and objectives for professional growth.
16. The findings indicate that the general area of evaluation of teacher inservice education programs is the area needing greatest improvement in Texas.
17. The findings show that overall, the elements of effective inservice education are moderately evident in teacher inservice education programs in Texas.

Recommendations

The results of this study indicated a need for planners of teacher inservice education programs to be knowledgeable about the elements of effective inservice education which should be applied as an effective strategy of teacher inservice education. The following recommendations were made as a result of this study:

1. On the basis of the findings, it is recommended that teacher inservice education planners become knowledgeable and skilled in applications of an effective strategy for teacher inservice education. The knowledge and skills

needed to apply an effective strategy for teacher inservice education should be acquired from professional training and personal study, as well as from working closely with teachers to gain their input regarding the school district's successes and failures in regard to each element of effective teacher inservice education.

2. On the basis of the findings, it is recommended that teacher inservice education program planners consider the incorporation of the following elements of an effective teacher inservice education strategy:

PLANNING FOR INSERVICE EDUCATION

1. Element 1. Teachers and administrators cooperatively plan the design, coordination,and continuity of the teacher inservice education program.
2. Element 2. Generally, inservice education programs respond to the strengths, weaknesses, and interests of the participants.
3. Element 3. Needs for inservice education are determined from a variety of data sources including self-perception, evaluation documents, student achievement data, legal mandates, school and district goals, as well as participant interests.
4. Element 4. The teacher appraisal process is one of the processes used to determine the strengths, weaknesses, and interests of the participants.
5. Element 5. Teachers and administrators use information from a needs assessment as one source to formulate clearly stated goals and objectives for inservice education.
6. Element 6. Each teacher sets individual goals and objectives for professional growth.
7. Element 7. Individual inservice education plans project 3-5 years in advance.

PRESENTATION OF INSERVICE EDUCATION

8. Element 8. Concrete, hands-on learning experiences are incorporated into inservice education programs.
9. Element 9. A variety of delivery modes are used in inservice education programs.
10. Element 10. More active, rather than passive, techniques are used in inservice education programs.
11. Element 11. The content of inservice education programs is aimed at changing teachers' behaviors as a preliminary step to changing pupils' behaviors.
12. Element 12. Inservice education programs combine subject matter content with modeling desirable teaching methodologies.
13. Element 13. The primary focus of inservice education programs is to improve the instructional program and to support the professional growth of teachers.
14. Element 14. Inservice education programs model effective teaching strategies.
15. Element 15. When appropriate, peer teaching is used to some degree in inservice education programs.

participation are part of inservice education programs.

17. Element 17. Immediate applicability of inservice education programs is planned and implemented.
18. Element 18. Follow-up and continuity of inservice education programs are facilitated.
19. Element 19. Generally, most inservice education programs are long-term.
20. Element 20. Whenever practical, inservice education programs are school-based, but also provide for district-wide awareness programs.
21. Element 21. Whenever possible and desirable to participants, inservice education programs are conducted during participants' normal working hours.
22. Element 22. Extrinsic incentives such as stipends, salary, or college credits provided for teachers to attend inservice education activities outside of the normal contract time.

EVALUATION OF INSERVICE
23. Element 23. The evaluation of inservice education addresses planning, implementation, and maintenance.
24. Element 24. If appropriate, a preassessment and a postassessment of the inservice program content are administered to participants.
25. Element 25. The evaluation of inservice education programs is planned cooperatively with teachers, administrators, and all other involved personnel.
26. Element 26. The evaluation is conducted immediately following the inservice program and then again after a period of time in order to measure the long-term effects.
27. Element 27. The evaluation measures the degree to which the inservice education program has had an effect on student learning.
28. Element 28. The evaluation measures the effect that the inservice education program has had on teacher attitudes, knowledge, and behavior.
29. Element 29. One purpose of the evaluation is to reassess a need for the inservice education program presented.

Recommendations for Further Study

Recommendations for further study include the following:

1. A study should be undertaken to compare and contrast the degree of presence of elements of effective inservice education in inservice education programs for elementary and secondary educators.
2. A study should be undertaken to determine an effective method of evaluation of teacher inservice education programs. The study might include a detailed survey of evaluation methods and the relative perceived effectiveness of these methods.

3. A study should be undertaken to determine methods for making inservice education programs conducted by regional education service centers more suited to the needs of local school districts.
4. A study should be undertaken to determine an effective strategy for inservice education for administrators. The study might include a urvey of the inservice training made available to administrators and their perceptions of the effectiveness of the training.
5. A study should be undertaken to determine the similarities and differences of the teacher inservice training related to the Texas include a questionnaire regarding the incorporation of the elements of effective teacher inservice education in the Texas Teacher Appraisal System teacher inservice program.

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